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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/531,105	03/17/2000	Shinkichi Gama	1614.1040	5186

21171 7590 05/24/2004

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EXAMINER

VAUGHAN, MICHAEL R

ART UNIT	PAPER NUMBER
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2131

DATE MAILED: 05/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/531,105

Applicant(s)

GAMA ET AL.

Examiner

Michael R Vaughan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**Detailed Office Action**

Claims 1-9 have been fully reconsidered and are pending. Claim 10 has been added and considered.

***Response to Amendment***

The title has been amended and is approved.

Figures 3, 10A, and 10B have been amended and entered.

***Response to Arguments***

Applicant's arguments filed 4-17-04 have been fully considered but they are not persuasive. Applicant argues on page 7-8 of the immediate response that neither Ha nor Schwarz teach "a cutting-off part cutting off the test signals input from a test terminal when the maintaining part maintains information indicating that the secret data is stored." Examiner noted in the previous office action that Ha did not teach this limitation. Examiner found this teaching in Schwarz and determined that this teaching would have been obvious to one skilled in the art to combine with the system of Ha.

Schwarz in column 2, starting at line 43, describes a protected memory system in which the memory is protected from unauthorized accessing during a test mode (line 55) by an external device. It is presumed from this teaching that any unauthorized outside device is cut off from accessing the memory. Schwarz explicitly states that protection is implemented during the test mode of operation. Therefore any attempt to gain access during the test mode would constitute a test signal. Signals are merely electrical currents.

In response to Applicant's allegation that there is no motivation to combine the teachings of Ha and Schwarz, the Examiner would like to note column 3, lines 2-3 of Schwarz, "the present invention provides enhanced security against unauthorized accessing of the data contents of the memory." Schwarz also teaches in column 2, lines 52-53, "the memory system prevents access by a device external to the microprocessor." Preventing unauthorized access to memory is precisely the object of Ha's invention. Incorporating Schwarz's teaching within the system of Ha would increase the security of the memory. One of ordinary skill in the art would thus be motivated to combine the two teachings for at least the reason of preventing unauthorized access to memory.

In response to the added limitation to the independent claims, "which is accessed by a host device through a host interface", Examiner finds the Ha reference to suggest this. Ha's invention is directed to protected memory that is inside of a larger system such as a computing device. It is inherent from his teaching that the memory is being protected from outside devices. Examiner asserts that the limitation of a host device is

well within the scope of Ha's invention. Any device trying to access (read) the memory could be considered a host of some type and similarly any type of connection that the host imposes to the memory must come through some type of interface.

In view of the foregoing statements by the Examiner, the Examiner respectfully disagrees with the Applicant and maintains the previous 35 USC 103 rejections.

***Claim Rejections - 35 USC ' 103***

Claims 1-3 and 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ha (USP 5,406,519) in view of Schwarz (USP 5,293,610).

As per claim 1, Ha teaches:

A storage device for maintaining information when power is OFF  
comprising (see column 2, lines 10-30):

host device accessed by a host interface (Fig 2, element 7);

an instruction part sending a read out instruction for instructing a memory  
storing secret data to read out data (see column 2, lines 10-30);

a decoding part decoding whether or not the data read out by the memory  
in response to the data reading instruction is the secret data stored in the memory  
(see column 2, lines 10-30);

a maintaining part maintaining information in a volatile state resulting from the decoding part (see FIG 2, element 7).

Ha is silent in expressly disclosing a test terminal inputting the test signals and a cutting-off part cutting off the test signals input from the test terminal when the maintaining part maintains information indicating that the secret data is stored. Schwarz teaches a test terminal inputting the test signals and a cutting-off part cutting off the test signals input from the test terminal when the maintaining part maintains information indicating that the secret data is stored (see column 2, lines 43-64). Having protection against a test signal greatly improves the security of the device and more importantly the security of the data stored by the device. Therefore, it would be advantageous have a test terminal whereby the system can be checked but at the same time, protect the content of the memory when testing the device. This prevents unauthorized users from gaining access to sensitive data if he/she is able to get access through a test mode. A test terminal would clearly add to the overall security of Ha's device. Also, the device of Ha would be better able to have a debug mode to insure quality control with the addition of a test terminal.

In view of this, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the teaching of Schwarz within the system of Ha because test modes are useful and protection during such modes is necessary in order to prevent sensitive data from being stolen. One skilled in the art would have been motivated to generate the claimed invention with a reasonable expectation of success.

As per claim 2, Ha teaches said read out instruction sent by said instruction part is a secret data read out instruction for instructing the memory storing secret data to read out the secret data (see column 2, lines 10-30).

As per claim 3, Ha teaches read out instruction sent by said instruction part is a data read out instruction for instructing the memory storing secret data to read out all data stored in the memory other than working data (see column 2, lines 10-30).

As per claim 5, Ha teaches instruction part sends the read out instruction when the power is ON (see column 2, lines 10-30).

As per claim 6, Ha teaches instruction part sends the read out instruction when the memory is reset (see column 2, lines 10-30).

As per claim 7, Ha teaches instruction part sends the read out instruction when a command for operating secret data is made (see column 2, lines 10-30).

As per claim 8, Ha teaches a storage device for maintaining information when power is OFF comprising (see column 2, lines 10-30):

Host device accessed by a host interface (Fig 2, element 7);

a decoding part gathering a set of data read out by a memory storing secret data in response to an access request and decoding based on the set of data whether or not the secret data is stored (see column 2, lines 10-30);

a maintaining part maintaining information in a volatile state resulting from the decoding part (see FIG 2, element 7).

Ha is silent in expressly disclosing a test terminal inputting the test signals and a cutting-off part cutting off the test signals input from the test terminal when the maintaining part maintains information indicating that the secret data is stored. The examiner supplies the same rationale for the motivation as recited in the rejection of claim 1 to incorporate the teachings of Schwarz within the system of Ha.

As per claim 9, Ha teaches a storage device for maintaining information when power is OFF comprising a maintaining part maintaining, in a volatile state, information indicating that an access request is conducted to a memory storing secret data (see column 2, lines 10-30) and a host device accessed by a host interface (Fig 2, element 7). Ha is silent in expressly disclosing a test terminal inputting the test signals and a cutting-off part cutting off the test signals input from the test terminal when the maintaining part maintains information indicating that the secret data is stored. The examiner supplies the same rationale for the motivation as recited in the rejection of claim 1 to incorporate the teachings of Schwarz within the system of Ha.

As per claim 10, Ha teaches:



a storage device for maintaining information in non-volatile storage  
comprising (see column 2, lines 10-30):

host device accessed by a host interface (Fig 2, element 7);

an instruction part sending a read out instruction for instructing a memory  
storing secret data to read out data (see column 2, lines 10-30);

a decoding part decoding whether or not the data read out by the memory  
in response to the data reading instruction is the secret data stored in the memory (see  
column 2, lines 10-30);

a maintaining part maintaining information in a volatile state resulting from  
the decoding part (see FIG 2, element 7).

Ha is silent in expressly disclosing a test terminal inputting the test signals and a  
cutting-off part cutting off the test signals input from the test terminal when the  
maintaining part maintains information indicating that the secret data is stored. Schwarz  
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indicating that the secret data is stored (see column 2, lines 43-64). Having protection  
against a test signal greatly improves the security of the device and more importantly  
the security of the data stored by the device. Therefore, it would be advantageous have  
a test terminal whereby the system can be checked but at the same time, protect the  
content of the memory when testing the device. This prevents unauthorized users from  
gaining access to sensitive data if he/she is able to get access through a test mode. A  
test terminal would clearly add to the overall security of Ha's device. Also, the device of

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Ha would be better able to have a debug mode to insure quality control with the addition of a test terminal.

In view of this, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the teaching of Schwarz within the system of Ha because test modes are useful and protection during such modes is necessary in order to prevent sensitive data from being stolen. One skilled in the art would have been motivated to generate the claimed invention with a reasonable expectation of success.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ha and Schwarz as applied to claim 1 above, and further in view of Gutttag (USP 4,521,852).

As per claim 4, the combined teaching of Ha and Schwarz are silent in expressly disclosing read out instruction sent by said instruction part is a data read out instruction for instructing the memory storing secret data to read out data indicating a presence of the secret data stored in an area that is not for the secret data. Having the ability to monitor whether or not secret data resides in unprotected memory is very advantageous to the system and subsequently can prevent secret data from being stolen. Gutttag teaches read out instruction sent by said instruction part is a data read out instruction for instructing the memory storing secret data to read out data indicating a presence of the secret data stored in an area that is not for the secret data (see column 6, lines 15-68). It would be undesirable to have a device that prevented the reading of memory but

could not recognize if the secret data had been some how written to memory that was not protected in the same way. The security of the system would then be null and void. Therefore, it is very evident that one skilled in the art would design procedures to monitor where the secret data is stored in a system in which the memory is safeguarded. The teachings of Guttag would enable more security to the system of Ha and Schwarz. The addition of another level of security greatly improves the system's ability to protect its secret data.

In view of this, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the teaching of Guttag within the combined system of Ha and Schwarz because monitoring the device's memory for the presence of secret data in an area that is not protected would allow greater protection over the secret data. It would have been obvious to one of ordinary skill to incorporate memory-monitoring schemes within a device designed primarily to protect memory from being read by unauthorized users. One skilled in the art would have been motivated to generate the claimed invention with a reasonable expectation of success.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael R Vaughan whose telephone number is 703-305-0354. The examiner can normally be reached on M-F 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on 703-305-9648. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael R Vaughan

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Examiner  
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